

INTERNATIONAL SEARCH REPORT

Internat Application No
PCT/US 03/20641

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F02M57/02 F02M59/46 F02M59/36 F02M55/02 F02M61/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 565 020 B1 (HELSEL TODD ET AL) 20 May 2003 (2003-05-20)	1,2,4,6
A	column 4, line 1 - line 32; figure 1	7
Y	US 4 782 807 A (TAKAHASHI TAKESHI) 8 November 1988 (1988-11-08)	1,2,4,6
A	abstract; figures	7

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

31 October 2003

Date of mailing of the international search report

14/11/2003

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6565020	B1	20-05-2003	NONE
US 4782807	A	08-11-1988	JP 2077017 C 09-08-1996
			JP 7117012 B 18-12-1995
			JP 63065167 A 23-03-1988
			DE 3728817 A1 17-03-1988